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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.             | CONFIRMATION NO.            |
|--|-------------|----------------------|---------------------------------|-----------------------------|
| 10/574,679   | 04/04/2006  | Peter Hupfield       | MSP642PCT1                      | 1749                        |
| 137 7590 01/25/2008<br>DOW CORNING CORPORATION CO1232<br>2200 W. SALZBURG ROAD<br>P.O. BOX 994<br>MIDLAND, MI 48686-0994 |             |                      | EXAMINER<br>LOEWE, ROBERT S     |                             |
|  |             |                      | ART UNIT<br>1796                | PAPER NUMBER                |
|  |             |                      | NOTIFICATION DATE<br>01/25/2008 | DELIVERY MODE<br>ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents.admin@dowcorning.com

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/574,679             | HUPFIELD, PETER     |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Robert Loewe           | 1796                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/ are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/4/06</u>  | 6) <input type="checkbox"/> Other: _____                          |

Art Unit: 1796

## **DETAILED ACTION**

### ***Priority***

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Great Britain on 11/21/03. It is noted, however, that applicant has not filed a certified copy of application GB-0327067.5 as required by 35 U.S.C. 119(b).

### ***Specification***

The disclosure is objected to because of the following informalities: the abbreviation "AIVN" is incorrect and should be corrected to --AIBN--. Appropriate correction is required.

### ***Claim Objections***

Claim 3 is objected to because of the following informalities: "CH<sub>2</sub>=C(R)COO-Rf" is incorrect and should be changed to --CH<sub>2</sub>=C(R)COO-Rf--. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eguchi et al. (US Pat. 4,316,941) in view of Smith et al. (US Pat. 3,329,661).

Art Unit: 1796

Claims 1 and 3-4: Eguchi et al. teaches a polymeric product having excellent heat and chemical resistance based on a perfluorinated polymer (2:10-24). Because of the perfluorinated groups and the structural similarities of instant claim 1, it is implicit that the polymer systems taught by Eguchi et al. have oil repellent properties. Eguchi et al. further teaches that these polymers are based on an amino-functional polysiloxane (A), which is bonded through its amino groups (3:63-67 and 4:35-65), to an addition copolymer (B) which comprises perfluorinated monomer(s) and olefinically unsaturated monomers which have functional groups capable of reacting with the amino groups of the polysiloxane (A) (4:47-49). Eguchi et al. further teaches that additional olefinically unsaturated comonomers may be employed (3:30-35 and 9:66-10:3).

Eguchi et al. does not explicitly teach that the perfluorinated comonomer is comprised of a fluoro-substituted alkyl ester of an olefinically unsaturated carboxylic acid. However, Smith et al. teach perfluorinated comonomers based on an olefinically unsaturated carboxylic acid containing perfluorinated groups along with an olefinically unsaturated carboxylic acid having epoxide (amino-reactive) groups. Smith et al. further teaches that the perfluorinated monomer meets the structural limitations of instant claim 3 (4:24-30). Smith et al. further teaches that the epoxide-functional monomer satisfies the structural limitations of instant claim 4 (3:48-53). Smith et al. further teaches that that additional comonomers, in addition to the perfluorinated monomer and epoxy-functional monomers can be employed (3:48-74). Eguchi et al. and Smith et al. are combinable because they are from the same field of endeavor, namely, protective coatings for substrates. At the time of the invention, a person having ordinary skill in the art would have found it obvious to employ the co-polymeric systems as taught by Smith et al. as a co-reactant with the amino-functional polysiloxanes as taught by Eguchi et al. and would have

Art Unit: 1796

been motivated to do so since Smith et al. teaches that the epoxide-perfluorinated copolymers have excellent oil and water repellence (2:18-21), and stabilities towards dry-cleaning and laundering processes (1:4:60-5:39). Smith et al. further teaches that the presence of primary amines is believed to lead to cross-linking of the system and can lead to higher durability of the polymer coating (2:64-3:2); the above teaching of Smith et al. are all desired properties of Eguchi et al. (9:11-14 and 9:35-38).

Claim 2: Eguchi et al. further teaches that the amino-functional polysiloxane of instant claim 1 meets the structural limitations of instant claim 2 (10:35 and 10:55, for example).

Claim 5: Eguchi et al. further teaches that the polymeric product has  $\text{-NHCH}_2\text{CHOH-}$  linkages resulting from the reaction of the amino-functional polysiloxane with the epoxide-groups of the perfluorinated addition copolymer (3:65).

Claim 6: Eguchi et al. further teaches that carboxylic acids may be used as a reactive site in the preparation of the amino-siloxane, perfluorinated epoxide-functional graft polymer compositions (3:55).

Claim 7: Eguchi et al. further teaches that acrylic acid esters can be added as additional comonomers (3:30-35).

Claims 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eguchi et al. (US Pat. 4,316,941) in view of Smith et al. (US Pat. 3,329,661).

Eguchi et al. teaches a process for preparing a polymeric product having excellent heat and chemical resistance based on a perfluorinated polymer (References 1-6). Because of the

Art Unit: 1796

perfluorinated groups and the structural similarities of instant claim 1, it is implicit that the polymer systems taught by Eguchi et al. have oil repellent properties. Eguchi et al. further teaches that these polymers are prepared via reaction of an amino-functional polysiloxane (A), which is bonded through its amino groups (Reference 1-6) and an addition copolymer (B) which comprises perfluorinated monomer(s) and olefinically unsaturated monomers which have functional groups capable of reacting with the amino groups of the polysiloxane (A) (Reference 1-6). Eguchi et al. further teaches that additional olefinically unsaturated comonomers may be employed (3:30-35 and 9:66-10:3).

Eguchi et al. does not explicitly teach that the process for preparing the composition utilizes a perfluorinated comonomer comprising a fluoro-substituted alkyl ester of an olefinically unsaturated carboxylic acid. However, Smith et al. does teach a process for preparing perfluorinated monomers based on perfluorinated, olefinically unsaturated carboxylic acid monomers, which are copolymerized with olefinically unsaturated carboxylic acid monomer(s) having epoxide (amino-reactive) groups. Smith et al. further teaches processes for coating substrates such as paper and leather (2:43-44), which subsequently render the substrates/fabrics hydrophobic and oleophobic (4:22-5:38 and the examples taught therein). Eguchi et al. and Smith et al. are combinable because they are from the same field of endeavor, namely, protective coatings for substrates. At the time of the invention, a person having ordinary skill in the art would have found it obvious to employ the co-polymeric systems as taught by Smith et al. as a co-reactant with the amino-functional polysiloxanes as taught by Eguchi et al. and would have been motivated to do so since Smith et al. teaches that the epoxide-perfluorinated copolymers have excellent oil and water repellence (2:18-21), and stabilities towards dry-cleaning and

Art Unit: 1796

laundering processes (1:4:60-5:39). Smith et al. further teaches that the presence of primary amines is believed to lead to cross-linking of the system and can lead to higher durability of the polymer coating (2:64-3:2); the above teaching of Smith et al. are all desired properties of Eguchi et al. (9:11-14 and 9:35-38).

### ***Relevant Art Cited***

The prior art made of record and not relied upon but is considered pertinent to applicants disclosure can be found on the attached PTO-892 form.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Loewe whose telephone number is (571) 270-3298. The examiner can normally be reached on Monday through Friday from 9:30 AM to 7:00 PM EST.

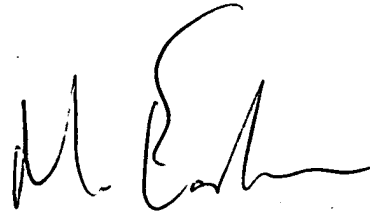
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

Art Unit: 1796

like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RSL  
10-Dec-07

A handwritten signature in black ink, appearing to read 'M. Eashoo', with a stylized flourish at the end.

MARK EASHOO, PH.D.  
SUPERVISORY PATENT EXAMINER

18/Dec/08